

Harold G. Holmberg  
34 Prospect St.  
Port Ludlow, WA 98365

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APR 02 2002

Geology and Earth

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MAR 26 2002

OLYMPIC REGION

Gordon Gibbs  
Department of Natural Resources  
411 Tillicum Lane  
Forks, WA 98331

March 24, 2002

Attn: Gordon Gibbs

Ref: DNR SEPA FILE. 00-042001  
Mats Mats Quarry Permit No. 70-010170  
Jefferson County

Dear Sir:

I recommend **NO ACTION** on the above referenced permit for the following reasons.

I am very concerned about the **Ground Water** around the quarry. Especially the area **WEST** of Mats Mats Bay Channel. The proposed expansion of the quarry will likely be deeper then the aquifers. The aquifers run East and West. Therefore they head straight for the Mats Mats Quarry. The mining operation will cause contamination and or loss of ground water in the wells **WEST** of the channel. As per the DEIS ground water seepage **GREATER THAN 50 gallons per minute** would be controlled. **ALL GROUND WATER MUST BE CONTROLLED**, the residents of the area do not have this amount of water to waste. If the mining operation damaged the ground water for our wells. The DEIS stated that the quarry owner would truck in water for the residences affected, and if necessary buy us out using the average of three independent appraisals. At pennies on the dollar and years later! Please notice that very little information was provided on boring test hole **EB-24 (only one)**. This test hole is on the west side of the quarry!!! **I suspect it shows a ground water problem.** The solution for this problem is require the owner of the Mats Mats Quarry to install a **JEFFERSON COUNTY PUD WATER DISTRICT** and **SEWER DISTRICT** for all of the Mats Mats Community before any further expansion. Please see attached map.

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2

3

4

Please notice the computerized Air Quality Analysis Map showing the **MAIN CONCENTRATION of FUGITIVE DUST** at the entrance to Mats Mats Channel and to the West **in** the channel. Sediment has been floating **in** from the channel for years.

The current in the channel is very swift on the incoming tide. I have hundreds of dated pictures showing the Basalt Muck floating on the water. I have three plus inches of Basalt muck on my beach. Please see the attached pictures of mud floating on the water. My beach gets a mud paint job twice a day at high tide. Also see the attached picture of my neighbor's oyster farm sitting in three inches of basalt mud. Oyster Men do not set seed oysters out in these conditions.

When they blast in certain areas of the quarry, it shakes the properties west of the channel like a **GIANT EARTHQUAKE**. This type of seismic activity can change the direction of ground water, crack foundations, crack septic tanks, and destroy a family's normal way of life. A Difference in Conditions Insurance Policy should be required of the mine owner for each resident in the community.

The Mine Dewatering Discharge Pipes **MUST** discharge into Admiralty Inlet instead of Mats Mats Bay.

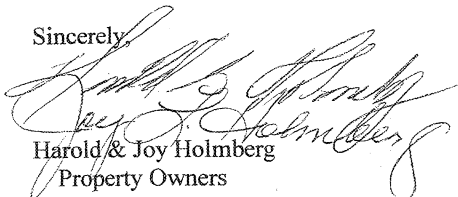
The Mats Mats Community is exposed to unnecessary dust, noise and seismic shocks from the quarry. Not to mention the loss of the Ecosystem in Mats Mats Bay and the potential loss of our well water.

**WHEN! WILL THE BASALT MUD BE REMOVED FROM MATS MATS BAY?**

**AGAIN! PLEASE! NO ACTION!**

If you have further questions, please call me at (360) 437-0885 or (206) 282-8513 Seattle.

Sincerely,



Harold & Joy Holmberg  
Property Owners

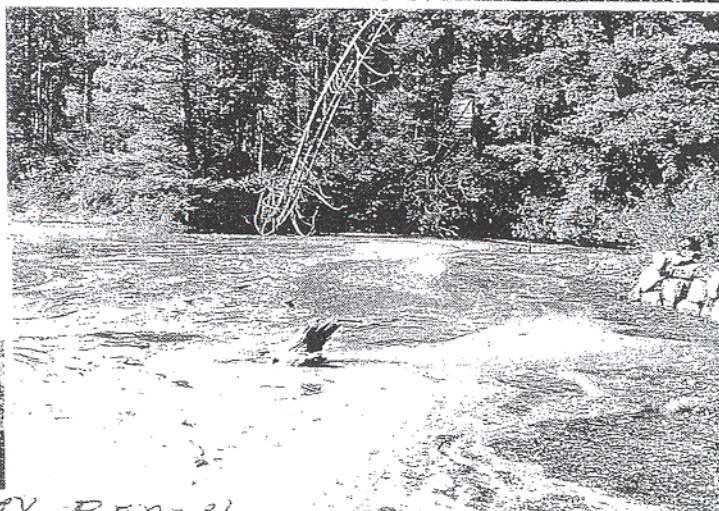
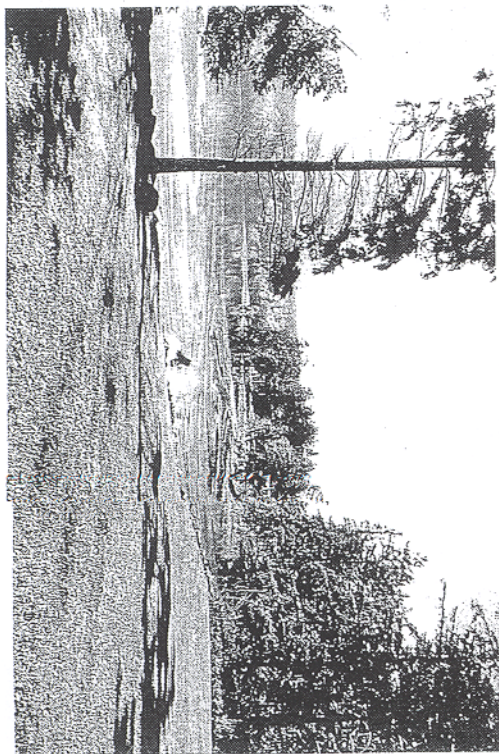
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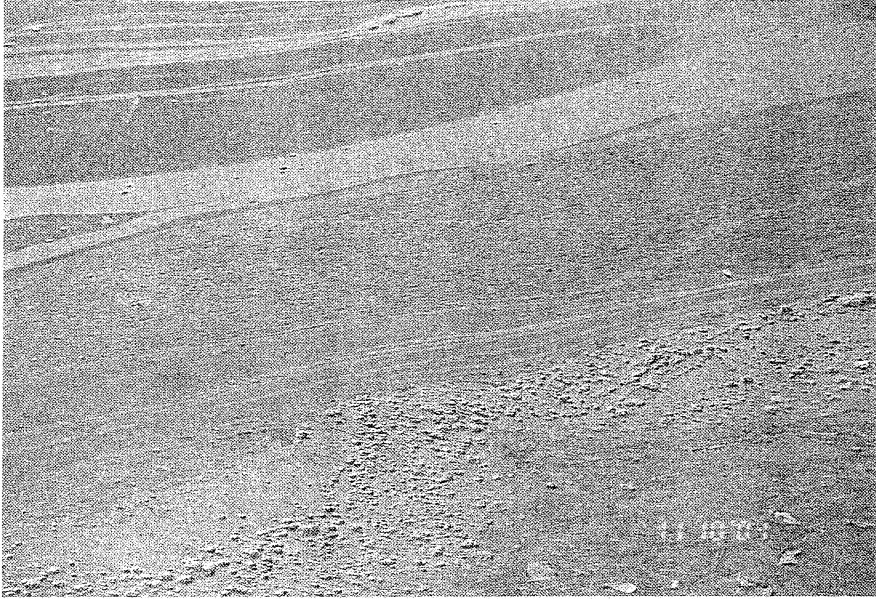
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MY BEACH  
ONE HOUR TO 4 HIGH TIDE 10-21-2000





11-10-07



11-10-07

MY BEACH





10-13-07



10-13-07

my BEAVER.



NOTICE 3' OF BARSBY MUD LOWER  
RIGHT HAND CORNER /



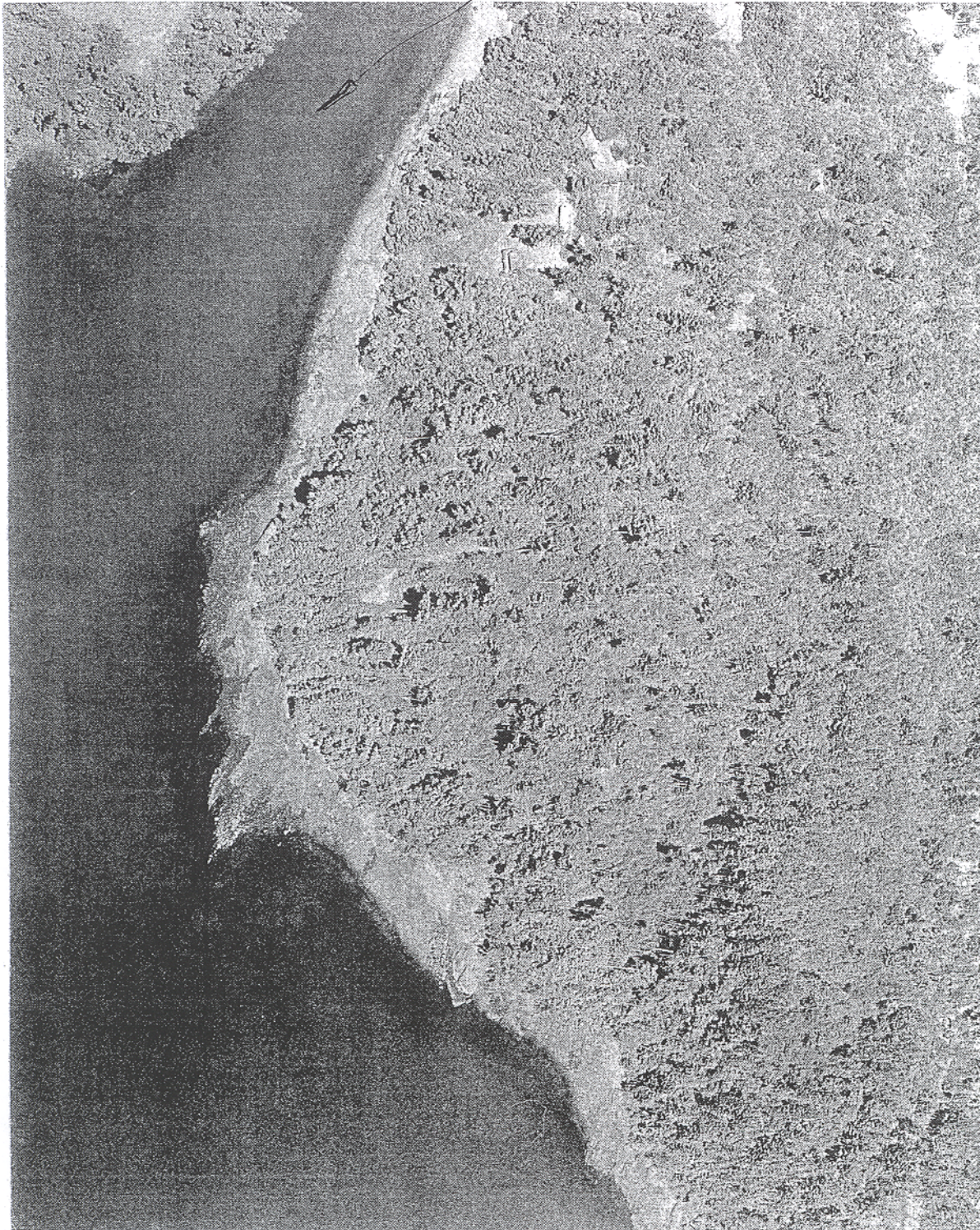


QUARRY # MATS MATS BAY.





MATS MATS CHANNEL ENTRANCE  
LITE COLOR

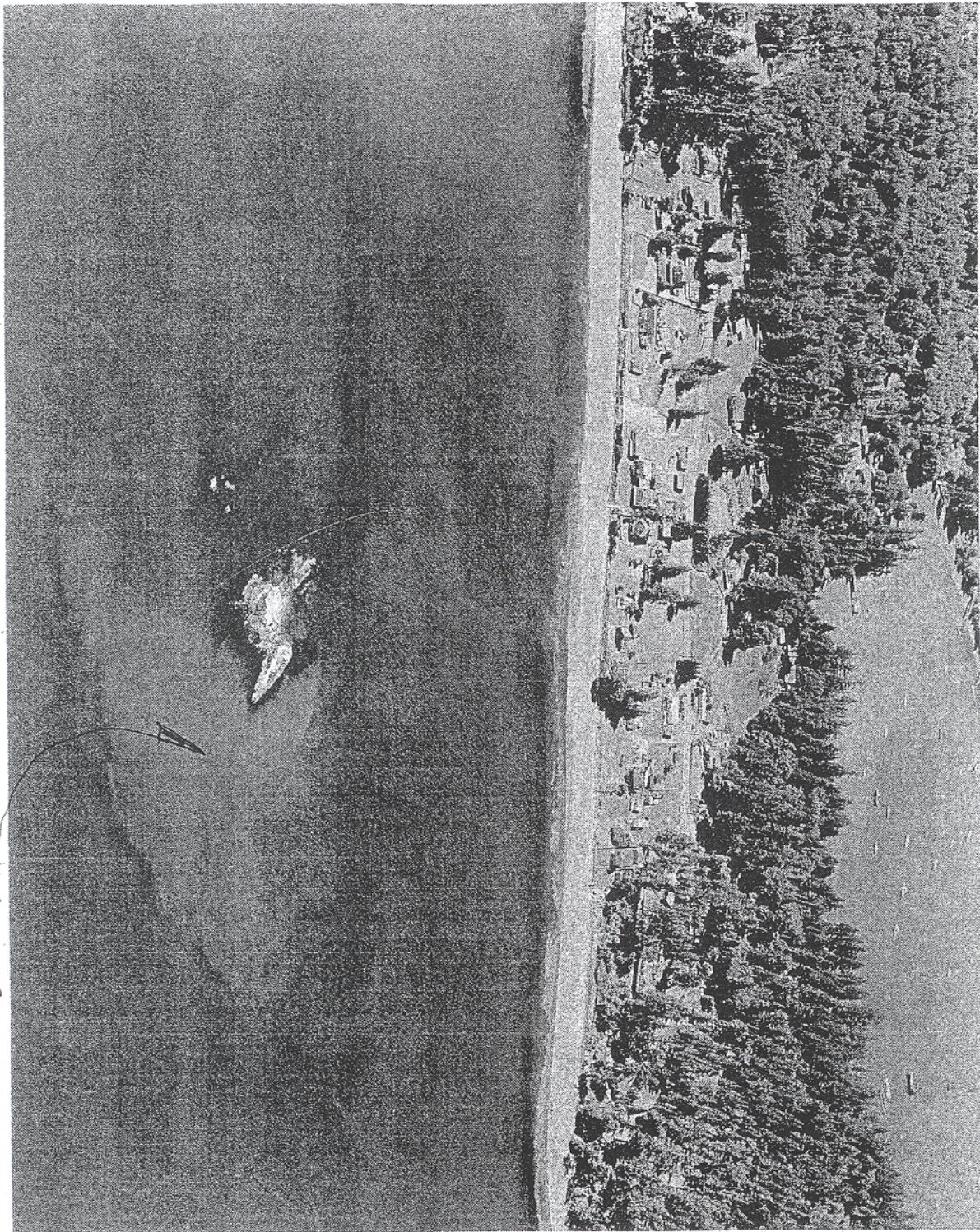




NO DEPARTING CRAFT DURING LOCK

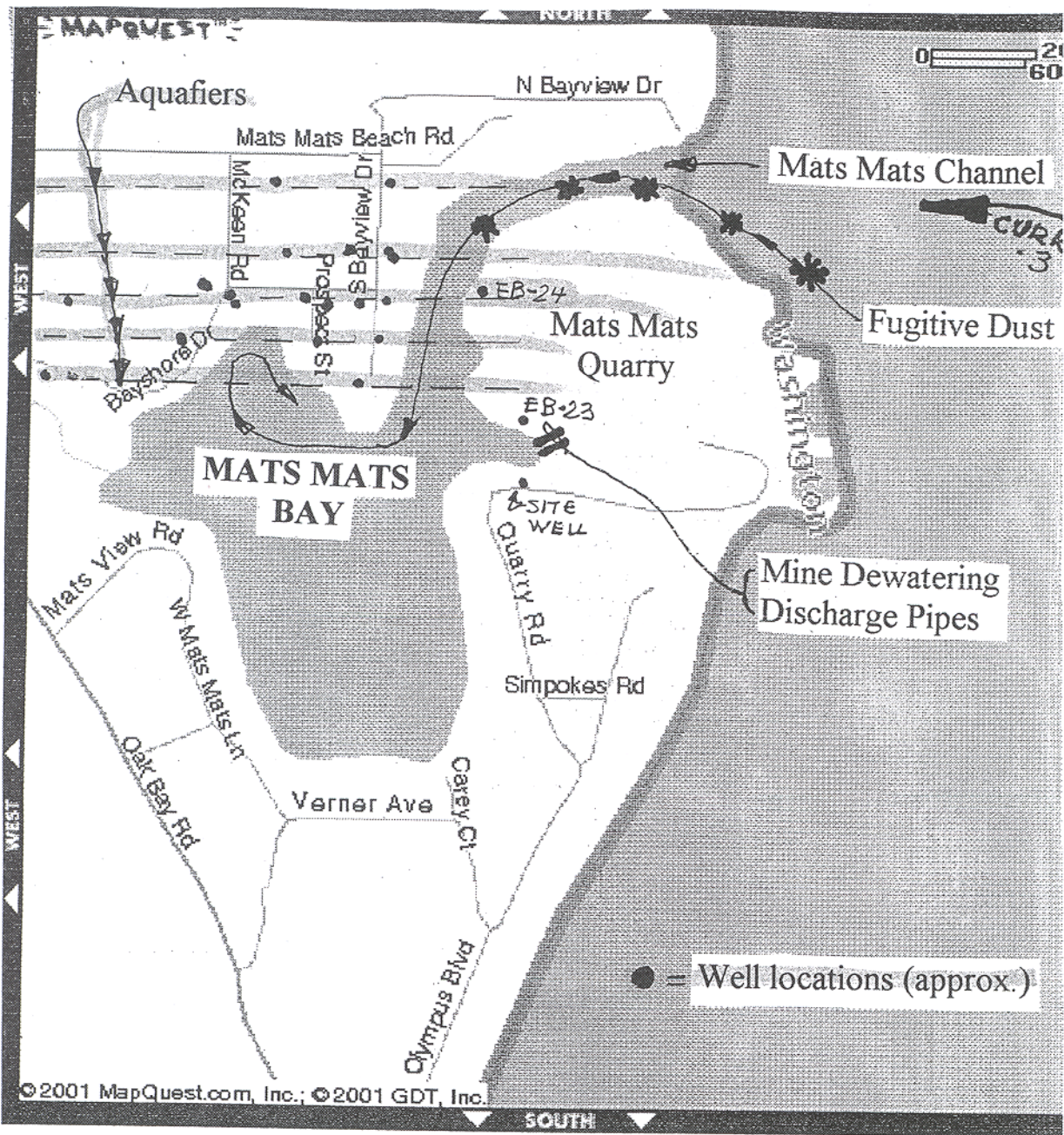






COLIDS ROCK  
SE. OF QUARRY LOADING DOCK







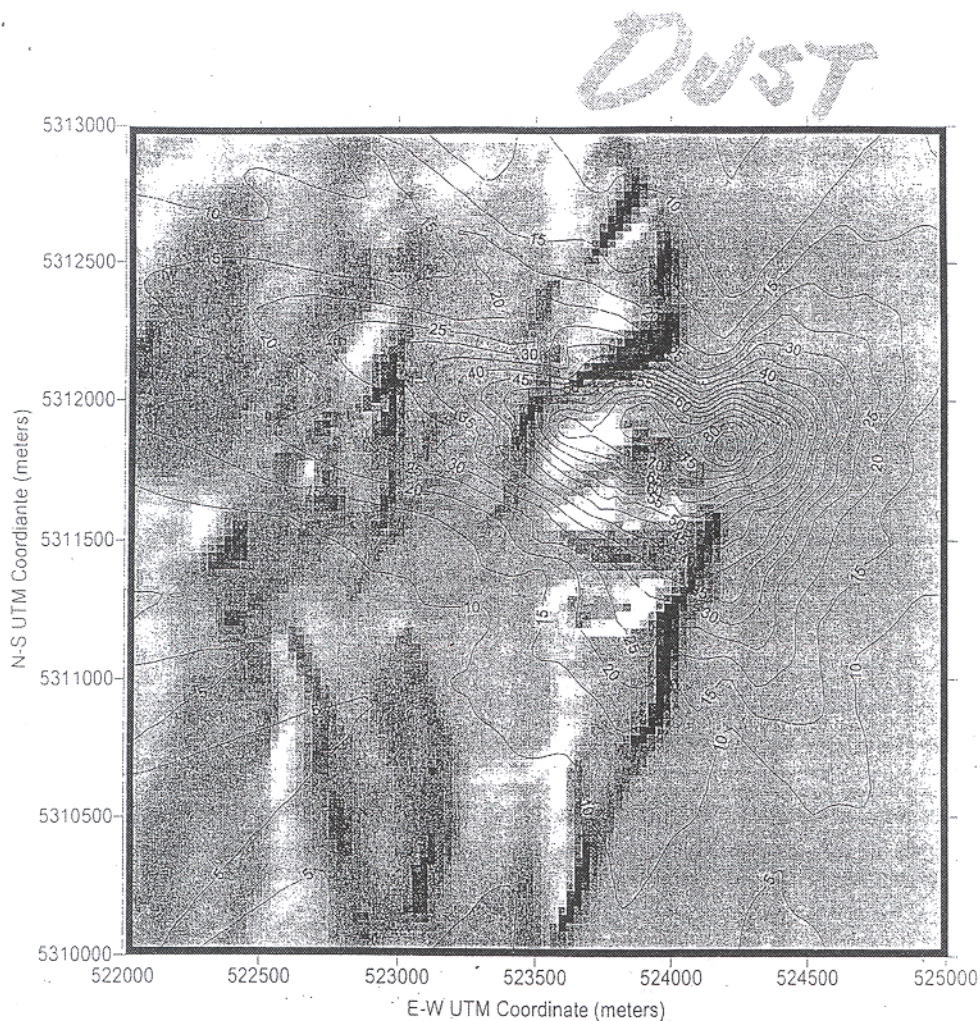


Figure 4. 24-Hour Maximum Concentration of PM10  
in Micrograms per Cubic Meter.

Further details on the modeling for PM10 can be found in the model printouts, available on request.

#### TSP Modeling Results

The results of the deposition analysis are depicted in Figures 5 and 6. Figure 5 is the computed deposition rate in grams per square meter per year. To compute a depth of the deposited material, MFG assumed a typical sedimentary density of 1.5 tons per cubic yard of soil. The depth results have been expressed in units of millimeters after 100 years of operation for the facility.





*Pacific Testing Laboratories Division*

September 17, 1998  
PSI Project No. 579-8T153  
Report No. 578-8T153.1

Mr. Harold Holmberg  
902 2nd Avenue N  
Seattle, WA 98109

Subject: Comparison of Composition of Whole Basalt Rock, Beach Sand and Sedimentary Coating

Dear Mr. Holmberg:

On September 14, 1998, the Chemistry Department of PTL/PSI received a piece of basalt rock and some beach sand for testing. The samples were reportedly from Port Ludlow, Washington. As you requested, the inorganic composition of each sample was tested to determine if the material from the beach was the same as the whole rock. No additional testing or consulting was requested.

#### REPORTED INFORMATION

It was reported that a "ribbon of muck" floated in with each hightide and was left behind as a deposit on the beach when the tide went out. The beach sand sample reportedly represented this "ribbon of muck" material. It was also noted that the basalt rock had been coated with a material of similar appearance on all but it's lower side. It was further reported that the deposited material was detrimental to the cultivation of shell fish due to the inability of the shellfish to adhere to rocks that had been coated with the deposit.

#### TESTING

The material that coated the rock was manually removed and tested. The whole rock was tested, and the beach sand was tested. Testing proceeded by crushing and weighing representative subsamples and digesting the resultant powders in a hydrofluoric acid (HF) solution. The solutions were then brought to a known volume in a boric acid solution and analyzed using a Thermo Jarrell Ash Atomscan 16 inductively coupled plasma spectrometer (ICP).

The digestates were tested using a semiquantitative, multi-element program as well as a program designed to test petrologic samples. Results from these tests are presented in the following tables and discussed below.



Mats Mats Quarry  
Jefferson County, Washington

*Affected Environment, Impacts, and Mitigations Report  
For Marine Environment  
Impacts and Mitigation Measures*

water quality parameters during periods when Mats Mats Bay was stratified or had low turnover rates. This could lower aquatic habitat quality of the bay.

Dust produced by rock processing, blasting, and vehicle traffic could potentially settle in regional water bodies in sufficient quantity to have an affect on aquatic habitat and species. Very fine sediments, which elevate turbidity for a sustained period, can directly affect fish behavior and physiology, or indirectly decrease food supply, habitat availability, or the ability of fish to find prey (Lloyd 1987). Turbidity can also exacerbate existing problems, such as poor DO or high temperatures, and lower fish tolerance to other water quality stresses.

An analysis of atmospheric deposition was conducted for an EIS being completed for the Mats Mats Quarry (MFG 2000). Results indicated that aerial-borne deposition would be heaviest over the site and immediately east of the peninsula in Admiralty Sound (Figure 4). Prevailing wind patterns would limit deposition directly into Mats Mats Bay to relatively low levels. Higher amounts would fall in the narrow passage connecting Mats Mats Bay to the Puget Sound; however, this narrow body of water does not contain a large amount of surface area so the total amount is low. Peak deposition rates were computed to be 1.2 millimeters over 100 years of operation (Figure 5), or approximately 20 grams per square meter per year. Peak deposition in Mats Mats Bay was calculated to be 0.3 millimeters over 100 years of operation (Figure 5). Much of this fine material would remain in suspension and slowly settle out in Puget Sound. Some could collect on the surface and wash ashore on beaches and in estuaries. Some would settle in Mats Mats Bay and in the nearshore area along the Admiralty Inlet.

Only minor turbidity and minor sediment-related impacts are expected as a result of continued operation of the project. Low turbidity impacts to eelgrass beds are generally not severe and long lasting since these areas are naturally deposition environments. No significant impacts are expected. Because the area does contain listed species at times, and is a critical habitat for chinook and chum salmon, it is recommended that measures be taken to reduce dust levels where practicable. These measures could include dust controls at the rock crushing plant and dust suppression measures on high use roads.

#### Barging

Barge and tug traffic could potentially result in short-term disturbances to the bottom sediments with resulting temporary increases in turbidity and locally depressed DO levels. Most tug operations will be conducted in deeper waters where bed disturbances would be less than if the tugs were operating over the shallower area further inshore. In addition, most of the sensitive habitat is closer to the shoreline and is away from the tug traffic and any upwelling of sediment as a result of prop wash. Although more mobile creatures such as adult salmonids and other

April 20, 2001

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## RESULTS

Table 1  
 RESULTS FROM THE ANALYSIS OF ROCK, BEACH SAND AND  
 DEPOSITED COATING FOR CHEMICAL ANALYSIS  
 USING INDUCTIVELY COUPLED PLASMA SPECTROMETRY  
 Results Reported as mg/kg (ppm)

Analyte	Basalt Rock	Beach Sand	Deposited Coating
Aluminum	20.3	13.3	12.3
Barium	0.004	0.04	0.03
Calcium	7.30	2.55	2.66
Iron	9.61	2.63	3.08
Magnesium	6.77	1.57	2.33
Manganese	0.11	0.05	0.06
Potassium	0.36	1.02	0.99
Silicon	45.4	73.6	54.0
Sodium	1.73	2.00	3.97
Titanium	0.97	0.42	0.41

## DISCUSSION

The whole rock was an olivine rich basalt with evidence of subsequent hydrothermal solution intrusion. The basalt was relatively unweathered. The rock had a mild odor of shellfish.

A light brown material coated all but one side (underside) of the rock. Microscopic examination revealed that the coating material was predominately fine grained, clay to silt size silica. A water rinse removed only a small portion of the material coating the rock. It was necessary to physically remove the material with a brush. Microscopic examination showed that the beach sand was predominately clay to sand size silica. The sand also had a strong odor of shellfish.

Results from the comparative chemical analysis show that no anomalies were present, and the beach sand and the deposited coatings are approximately similar. The only elements that increased in concentration from the basalt to the deposited sands were silica, barium, potassium and sodium. Barium, potassium and sodium are common constituents of seawater and the relative increase in concentration is likely due to evaporation of seawater.



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Basalt that is exposed to weathering initially loses it's more mobile cations (magnesium and calcium) leaving the remaining rock relatively enriched in the less mobile ions (silicon and titanium.) The deposited samples show a relatively greater amount of silicon. The lesser amounts of titanium and iron in the deposited samples can be attributed to the relative resistance of iron and titanium oxides to weathering as well as their greater density which would limit their transportation in solution.

**CONCLUSION**

The exclusion of outside materials, especially calcium, in the deposited samples and the relative abundance of elements found in the basalt rock and the deposited samples indicates that the source of the material deposited on the beach is likely basalt from near the area of sample collection.

This test has been made and the report prepared based upon the specific samples provided to us by Harold Holmberg for testing. We assume no responsibility for variations in the quality of a sample made by persons or under conditions over which we have no control.

This report is provided for the information of Harold Holmberg only. If this report is to be reproduced and/or transmitted to a third party, it must be reproduced and/or transmitted in its entirety. Any exceptions will be made only with the written permission of PTL/PSI.

Thank you for using PSI. If you have any questions, or we can be of further assistance to you, please contact us at (206) 282-0666.

Reviewed by: Tracy Yerian, Ph.D., Manager  
Seattle Analytical Chemistry



Sincerely,



Clinton Holzhauser, Senior Environmental Chemist



## Response to Letter 23

HOLMBERG, HAROLD

1. Comment acknowledged. Please refer to Response to Letter 7 (Mats Mats Area Coalition – March 7), comment 109.
2. Comment acknowledged. Please refer to Response to Letter 4 (Jefferson County), comment 1.
3. Please refer to the *Groundwater* section and *Appendix I* of this Final EIS for a discussion on the regional and site hydrogeology.
4. Comment acknowledged. Although the groundwater analysis prepared for this EIS indicates a very low probability of proposed mining impacting off-site wells, a Groundwater Monitoring Program is proposed to verify that proposed mining would not result in well impacts and identify a range of remedies. Please refer to *Appendix I* and *Appendix IX* for detail on the Plan.

Quarry operations at the Mats Mats site present two avenues of sediment delivery to Mats Mats Bay; airborne deposition of dust and discharge of stormwater runoff. As indicated in the *Air Quality* section of this EIS, airborne dust accumulations in Mats Mats Bay would total less than 5/100<sup>ths</sup> of an inch if the quarry were to operate for 100 years, and dust is not a significant contributor of sediment in Mats Mats Bay.

Stormwater discharge from the quarry following the stormwater system upgrades implemented by Glacier Northwest after site acquisition in 1995 has been compliant with NPDES General Permit discharge requirements, and is not a measurable source of sediment to Mats Mats Bay.

The resuspension of sediment by propeller wash from tugboats moving barges loaded at the facility has been mentioned as a potential source of sediment to Mats Mats Bay. However, all barge operations associated with the quarry occur outside of, and on the opposite side of the quarry from Mats Mats Bay. Any material that is resuspended in the barge berthing area is likely to either settle to the bottom within the berthing area confined by the constructed break waters, or be dissipated in the current from Admiralty Inlet

Dredging activity within the barge berthing area would be evaluated under a separate permit process for that action. While dredging in the berthing area would resuspend sediment in the vicinity of the dredge, all activities would be controlled to comply with water quality restrictions. Furthermore, turbidity generated by dredging would be a short term temporary condition, on the opposite side of the Quarry from Mats Mats Bay.

Subsequent to the issuance of the Draft EIS, a sediment survey of Mats Mats Bay was conducted to determine the composition of sediment grains within the bay. The samples indicate that the bay sediment contains a large percentage of quartz, which is



inconsistent with the character of the basalt mined at the site. The likely sources of the majority of the sediment in the bay include: 1) the eroding bluff area on the western side of the inlet to the bay; and, 2) sediment transported into the bay via Mats Mats Creek. Other sources may also contribute to bay sediment. The mineral assemblage indicates that the quarry is not a major contributor to overall sediment in the bay (refer to *Appendix XVI* for the *Mats Mats Bay Sediment Survey*).

5. Extensive research regarding differences between impacts attributable to earthquakes and the effects of blast vibrations has been conducted and comparisons provided at public meetings for this project. The magnitude, velocity, frequency, duration, and ground acceleration characteristics of blasting differ significantly from earthquakes (refer to *Appendix XI* of this Final EIS for a discussion on the differences between blasting and earthquakes). While the level of damage stated in the comment can be associated with an earthquake, it cannot be reconciled with the very low vibration amplitudes measured on the west side of the channel during quarry blasting.
6. Comment acknowledged. As indicated in the *Surface Water* section of this Final EIS, significant water quality impacts to Mats Mats Bay would not be anticipated with the proposed continuation of mining activity.